

WHAT IS CLAIMED IS:

1. An illumination apparatus which directs light
from a light source to an illuminated area, comprising:
a plurality of light emitters as the light source;
5 a lighting unit configured to cause the light
emitters to emit light so that the intensities of light
emitted by them can be adjusted;
an optical system configured to, of light emitted
by the emitters, direct light passed through its light
10 concentration area to the illuminated area;
a light control member configured to perform at
least one of changing the path of light from the
emitters to be directed to the illuminated area and
moving of the light emitters;
15 a movement unit configured to allow the light
control member to operate; and
a light selector control unit configured to
control at least one of the movement unit and the
lighting unit so as to select light to be directed to
20 the illuminated area from light of the emitters,
wherein the light selector control unit controls
the lighting unit to cause an emitter to emit light
when it is positioned in the vicinity of the light
concentration area by the operation of the light
25 control member.
2. The apparatus according to claim 1, wherein
the light selector control unit controls the lighting

unit so that, when an emitter does not face the light concentration area by the operation of the light control member, it emits light the intensity of which is weaker than when it faces the light concentration area.

5 3. The apparatus according to claim 2, wherein the light selector control unit controls the lighting unit so as to turn off an emitter while it does not face the light concentration area by the operation of the light control member.

10 4. The apparatus according to claim 1, wherein the light selector control unit controls the lighting unit so as to cause an emitter to emit light continuously while it faces the light concentration area.

15 5. The apparatus according to claim 4, wherein the light selector control unit controls the lighting unit so as to vary the intensity of light emitted by the emitter to be emitted during continuous emission.

20 6. The apparatus according to claim 5, wherein the light selector control unit controls the lighting unit so as to increase the magnitude of a current applied to the emitter with time during continuous emission.

25 7. The apparatus according to claim 4, wherein the light selector control unit controls the lighting unit so as to cause an emitter to emit light only while

its light emitting surface is covered in its entirety with the light concentration area.

8. The apparatus according to claim 1, wherein the light selector control unit controls the lighting unit so as to cause a plurality of emitters which are positioned in the vicinity of the light concentration area to emit light simultaneously.

9. The apparatus according to claim 1, wherein the light selector control unit controls the following two states: the transient state in which at least one of the movement unit and the lighting unit is controlled in order to allow a selection from the emitters; and the stable state in which a selection can be made from the emitters, and wherein the stable state is the one in which the illuminated area is illuminated.

10. A projector display apparatus comprising:
an illumination apparatus which directs light from a light source to an illuminated area including:
a plurality of light emitters as the light source;
a lighting unit configured to cause the light emitters to emit light so that the intensities of light emitted by them can be adjusted;
an optical system configured to, of light emitted by the emitters, direct light passed through its light concentration area to the illuminated area;

a light control member configured to perform at least one of changing the path of light from the emitters to be directed to the illuminated area and moving of the light emitters;

5 a movement unit configured to allow the light control member to operate; and

a light selector control unit configured to control at least one of the movement unit and the lighting unit so as to select light to be directed to
10 the illuminated area from light of the emitters,

wherein the light selector control unit controls the lighting unit to cause an emitter to emit light when it is positioned in the vicinity of the light concentration area by the operation of the light
15 control member;

a light modulation device placed in the illuminated area configured to light-modulate light from the illumination apparatus according to image data;

20 a projection unit configured to project light modulated by the light modulation device; and

a light modulation device control unit configured to switch the light modulated states of the light modulation device,

25 wherein the light selector control unit of the illumination apparatus selects an emitter to emit light in synchronism with the switching of the light

modulated states of the light modulation device.

11. The apparatus according to claim 10, wherein
the light selector control unit in the illumination
apparatus does not change a selected emitter during a
5 modulation period from a point of time of switching to
the next point of time of switching.

12. The apparatus according to claim 11, wherein
the light modulation device is of a pulse width
modulation type which represents the light modulated
10 states according to image data in terms of one period
of the modulation period.

13. The apparatus according to claim 10, wherein
the light modulation device control unit
represents the image data in one frame period, and
15 the light selector control unit in the
illumination apparatus selectively turns on a fixed
number of emitters during the frame period.

14. The apparatus according to claim 13, wherein
the light modulation device is of a pulse width
20 modulation type which represents the light modulated
states according to image data in terms of one period
of the modulation period.

15. The apparatus according to claim 10, wherein
the movement unit in the illumination apparatus is
25 configured to repeat operation and stop, and
the light selector control unit in the
illumination apparatus selects an emitter position in

the light concentration area when the movement unit is placed in the stopped state.

16. The apparatus according to claim 10, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so that, when an emitter does not face the light concentration area by the operation of the light control member, it emits light the intensity of which is weaker than when it faces the light concentration area.

17. The apparatus according to claim 16, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so as to turn off an emitter while it does not face the light concentration area by the operation of the light control member.

18. The apparatus according to claim 10, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so as to cause an emitter to emit light continuously while it faces the light concentration area.

19. The apparatus according to claim 18, wherein the light selector control unit in the illumination apparatus controls the lighting unit in the illumination apparatus so as to vary the intensity of light emitted by the emitter to be emitted during

continuous emission.

20. The apparatus according to claim 19, wherein
the light selector control unit in the illumination
apparatus controls the lighting unit in the
5 illumination apparatus so as to increase the magnitude
of a current applied to the emitter with time during
continuous emission.

21. The apparatus according to claim 18, wherein
the light selector control unit in the illumination
10 apparatus controls the lighting unit in the
illumination apparatus so as to cause an emitter to
emit light only while its light emitting surface is
covered in its entirety with the light concentration
area.

15 22. The apparatus according to claim 10, wherein
the light selector control unit in the illumination
apparatus controls the lighting unit in the
illumination apparatus so as to cause a plurality of
emitters which are positioned in the vicinity of the
20 light concentration area to emit light simultaneously.

23. The apparatus according to claim 10, wherein
the light selector control unit in the
illumination apparatus controls the following two
states: the transient state in which at least one of
25 the movement unit and the lighting unit in the
illumination apparatus is controlled in order to allow
a selection from the emitters; and the stable state in

which a selection can be made from the emitters, and
the projector display apparatus is allowed to make
a projector display in the stable state.

24. An illumination apparatus which directs light
5 from a light source to an illuminated area, comprising:
a plurality of light emitters as the light source;
lighting means for causing the light emitters to
emit light so that the intensities of light emitted by
them can be adjusted;

10 optical means for, of light emitted by the
emitters, directing light passed through its light
concentration area to the illuminated area;

a light control member for performing at least one
of changing the path of light from the emitters to be
15 directed to the illuminated area and moving of the
light emitters;

movement means for allowing the light control
member to operate; and

light selector control means for controlling at
20 least one of the movement means and the lighting means
so as to select light to be directed to the illuminated
area from light of the emitters,

wherein the light selector control means controls
the lighting means to cause an emitter to emit light
25 when it is positioned in the vicinity of the light
concentration area by the operation of the light
control member.

25. A projector display apparatus comprising:

an illumination apparatus which directs light from
a light source to an illuminated area including:

a plurality of light emitters as the light
5 source;

lighting means for causing the light emitters
to emit light so that the intensities of light emitted
by them can be adjusted;

optical means for, of light emitted by the
10 emitters, directing light passed through its light
concentration area to the illuminated area;

a light control member for performing at
least one of changing the path of light from the
emitters to be directed to the illuminated area and
15 moving of the light emitters;

movement means for allowing the light control
member to operate; and

light selector control means for controlling
at least one of the movement means and the lighting
20 means so as to select light to be directed to the
illuminated area from light of the emitters,

wherein the light selector control means
controls the lighting means to cause an emitter to emit
light when it is positioned in the vicinity of the
25 light concentration area by the operation of the light
control member;

a light modulation device placed in the

illuminated area for light-modulating light from the
illumination apparatus according to image data;

projection means for projecting light modulated by
the light modulation device; and

5 light modulation device control means for
switching the light modulated states of the light
modulation device,

 wherein the light selector control means of the
illumination apparatus selects an emitter to emit light
10 in synchronism with the switching of the light
modulated states of the light modulation device.